



SEQUENCE LISTING

<110> Ruoho, Arnold E.

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<120> BACTERIORHODOPSIN/G PROTEIN-COUPLED RECEPTOR CHIMERAS

<130> 096429-9146

<140> 10/688,221

<141> 2003-10-16

<150> US 09/389,835

<151> 1999-09-03

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<151> 1998-09-03

<160> 53

<170> Word 97 (DOS text file)

<210> 1

<211> 1626

<212> DNA

<213> Halobacterium salinarium

<220>

<221> CDS

<222> (394)..(1182)

<400> 1

ggatccgacg tgaagatggg gctcccgatg ggtgcaaccg tgaagtccgt cacggctgctg 60

tcacgacagg agccgaccag cgacacccag aaggtgcgaa cggttgagtg ccgcaacgat 120

cacgagttt tcgtgcgcctt cgagtggtaa cacgcgtgca cgcacatcgact tcaccgcggg 180

tgtttcgacg ccagccggcc gttgaaccag cagggcagcgg gcatttcaca gccgctgtgg 240

cccacacact cgggtgggtg cgctatTTTg gtatggTTTg gaatccgcgt gtcggctccg 300

tgtctgacgg ttcatcggtc taaattccgt cacgagcgta ccatactgat tgggtcgtag 360

agttacacac atatcctcgt taggtactgt tgc atg ttg gag tta ttg cca aca 414

Met Leu Glu Leu Leu Pro Thr

1

5

gca gtg gag ggg gta tcg cag gcc cag atc acc gga cgt ccg gag tgg 462

Ala Val Glu Gly Val Ser Gln Ala Gln Ile Thr Gly Arg Pro Glu Trp

10

15

20

atc tgg cta gcg ctc ggt acg gcg cta atg gga ctc ggg acg ctc tat 510

Ile Trp Leu Ala Leu Gly Thr Ala Leu Met Gly Leu Gly Thr Leu Tyr

25	30	35
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ttc ctc gtg aaa ggg atg ggc gtc tcg gac cca gat gca aag aaa ttc 558

Phe Leu Val Lys Gly Met Gly Val Ser Asp Pro Asp Ala Lys Lys Phe

40	45	50	55
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tac gcc atc acg acg ctc gtc cca gcc atc gcg ttc acg atg tac ctc 606

Tyr Ala Ile Thr Thr Leu Val Pro Ala Ile Ala Phe Thr Met Tyr Leu

60	65	70
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tcg atg ctg ctg ggg tat ggc ctc aca atg gta ccg ttc ggt ggg gag 654

Ser Met Leu Leu Gly Tyr Gly Leu Thr Met Val Pro Phe Gly Gly Glu

75	80	85
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cag aac ccc atc tac tgg gcg cggt tac gct gac tgg ctg ttc acc acg 702

Gln Asn Pro Ile Tyr Trp Ala Arg Tyr Ala Asp Trp Leu Phe Thr Thr

90	95	100
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ccg ctg ttg ttg tta gac ctc gcg ttg ctc gtt gac gcg gat cag gga 750

Pro Leu Leu Leu Leu Asp Leu Ala Leu Leu Val Asp Ala Asp Gln Gly

105	110	115
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acg atc ctt gcg ctc gtc ggt ggc gac ggc atc atg atc ggg acc ggc 798

Thr Ile Leu Ala Leu Val Gly Ala Asp Gly Ile Met Ile Gly Thr Gly

120	125	130	135
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ctg gtc ggc gca ctg acg aag gtc tac tcg tac cgc ttc gtg tgg tgg 846

Leu Val Gly Ala Leu Thr Lys Val Tyr Ser Tyr Arg Phe Val Trp Trp

140	145	150
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gcg atc agc acc gca gcg atg ctg tac atc ctg tac gtg ctg ttc ttc 894

Ala Ile Ser Thr Ala Ala Met Leu Tyr Ile Leu Tyr Val Leu Phe Phe

155

160

165

ggg ttc acc tcg aag gcc gaa agc atg cgc ccc gag gtc gca tcc acg 942

Gly Phe Thr Ser Lys Ala Glu Ser Met Arg Pro Glu Val Ala Ser Thr

170

175

180

ttc aaa gta ctg cgt aac gtt acc gtt gtg ttg tgg tcc gcg tat ccc 990

Phe Lys Val Leu Arg Asn Val Thr Val Val Leu Trp Ser Ala Tyr Pro

185

190

195

gtc gtg tgg ctg atc ggc agc gaa ggt gcg gga atc gtg ccg ctg aac 1038

Val Val Trp Leu Ile Gly Ser Glu Gly Ala Gly Ile Val Pro Leu Asn

200 205 210 215

atc gag acg ctg ctg ttc atg gtg ctt gac gtg agc gcg aag gtc ggc 1086

Ile Glu Thr Leu Leu Phe Met Val Leu Asp Val Ser Ala Lys Val Gly

220

225

230

ttc ggg ctc atc ctc ctg cgc agt cgt gcg atc ttc ggc gaa gcc gaa 1134

Phe Gly Leu Ile Leu Leu Arg Ser Arg Ala Ile Phe Gly Glu Ala Glu

235

240

245

gcg ccg gag ccg tcc gcc ggc gac ggc gcg gcc gcg acc agc gac tga 1182

Ala Pro Glu Pro Ser Ala Gly Asp Gly Ala Ala Ala Thr Ser Asp

250

255

260

tcgcacacgc aggacagccc cacaaccggc gcggctttc aacgacacac gatgagtccc 1242

ccactcggtc ttgtactcgc acgatcgacg gacgacggcg acgcccacgg cgactttcca 1302

gcgtcgctca acaggctggc tgtcgtcgac ctgcgtggtg cggctctcggt cggtgcggcg 1362

ggtctgttcg ccgtgccgtt cctgcggtcg ttcggcatga cggtttggaa agcgttcacc 1422

gttgttggtg tctccgagtt cgtctcgcc atcgtggcg ccctcgccgg ctaccaccc 1482

tacaccacgc ccgacgacta gcagggccccg ctggcgagcc atcactccccg ctgtggcgag 1542

gcgacggcccg ttctgttacccg ctaccgccccg cccggagtcg gggacatcggt cggtggcgatg 1602

cgcacatcgaaac ggtcacccgg atcc 1626

<210> 2

<211> 262

<212> PRT

<213> Halobacterium salinarium

<400> 2

Met Leu Glu Leu Leu Pro Thr Ala Val Glu Gly Val Ser Gln Ala Gln

1

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10

15

Ile Thr Gly Arg Pro Glu Trp Ile Trp Leu Ala Leu Gly Thr Ala Leu

20

25

30

Met Gly Leu Gly Thr Leu Tyr Phe Leu Val Lys Gly Met Gly Val Ser

35

40

45

Asp Pro Asp Ala Lys Lys Phe Tyr Ala Ile Thr Thr Leu Val Pro Ala

50

55

60

Ile Ala Phe Thr Met Tyr Leu Ser Met Leu Leu Gly Tyr Gly Leu Thr

65

70

75

80

Met Val Pro Phe Gly Gly Glu Gln Asn Pro Ile Tyr Trp Ala Arg Tyr

85

90

95

Ala Asp Trp Leu Phe Thr Thr Pro Leu Leu Leu Asp Leu Ala Leu

100

105

110

Leu Val Asp Ala Asp Gln Gly Thr Ile Leu Ala Leu Val Gly Ala Asp

115

120

125

Gly Ile Met Ile Gly Thr Gly Leu Val Gly Ala Leu Thr Lys Val Tyr

130

135

140

Ser Tyr Arg Phe Val Trp Trp Ala Ile Ser Thr Ala Ala Met Leu Tyr

145

150

155

160

Ile Leu Tyr Val Leu Phe Phe Gly Phe Thr Ser Lys Ala Glu Ser Met

165

170

175

Arg Pro Glu Val Ala Ser Thr Phe Lys Val Leu Arg Asn Val Thr Val

180

185

190

Val Leu Trp Ser Ala Tyr Pro Val Val Trp Leu Ile Gly Ser Glu Gly

195

200

205

Ala Gly Ile Val Pro Leu Asn Ile Glu Thr Leu Leu Phe Met Val Leu

210

215

220

Asp Val Ser Ala Lys Val Gly Phe Gly Leu Ile Leu Leu Arg Ser Arg

225

230

235

240

Ala Ile Phe Gly Glu Ala Glu Ala Pro Glu Pro Ser Ala Gly Asp Gly

245

250

255

Ala Ala Ala Thr Ser Asp

260

<210> 3

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: oligonucleotide

primer

<400> 3

cgcgtatcca gtcgtgtggc 20

<210> 4

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 4

cctcctgagg agtcgtgcga 20

<210> 5

<211> 91

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 5

atcctgtacg tgctgttctt cgggttcacc gtcaaggagg cggcgccgca gcagcaggag 60

tcggcgacga cgagaaggc ggagaaggag g

91

<210> 6

<211> 96

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 6

cgggataacgc ggaccacaac acaacggtaa cgttacgcag tactttgaac gtggatgcga 60

cctccatgcg cgtgacctcc ttctccgcct tctgcg

96

<210> 7

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 7

gtacatcctg tacgtgctgt tcttcg

26

<210> 8
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 8 19
acgacggat acgcggacc

<210> 9
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 9 22
atcctgtacg tgctgttctt cg

<210> 10
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 10
cgggataacgc ggacc 15

<210> 11
<211> 83
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 11
atcctgtacg tgctgttctt cgggttcacc gcgcgctccc acacgcgcaa gatctccacg 60
ctcccgcgcg cgaacatgaa ggg 83

<210> 12

<211> 75

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide

primer

<400> 12

cgggatacgc ggaccacaac acaacggtaa cgttacgcag tactttgaac gtggatgcga 60

cgcccttcat gttcg

75

<210> 13

<211> 89

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide

primer

<400> 13

gggttcaccc aggtcttcta cctcatccgc aagcagctga caagaaggtc tccgcgtcct 60

ccggcgaccc gcagaagtac tacggcaag

89

<210> 14
<211> 90
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 14
cacaacggta acgttacgca gtactttgaa cgtggatgcg acggacttcg cgatcttgag 60

ctccttgcgg tagtacttct gcgggtcgcc 90

<210> 15
<211> 84
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 15
gggttcaccg gccagctcgt ct当地acggtc aaggaggcgg cggcgcagca gcaggagtgc 60
gctgacgacgc agaaggcgg a gaag

<210> 16

<211> 90

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 16

ggaccacaaac acaacggtaa cgttacgcag tactttgaac gtggatgcga cgccgctgac 60

ctccttctcc gccttctgcg tcgtcgccga 90

<210> 17

<211> 68

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 17

tttgtacatg tacatcctgt acgtgctgtt cttcgggttc acccagctcg tcttcacgg 60

caaggagg 68

<210> 18

<211> 100

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide

primer

<400> 18

gctgccgatc agccacacga ctggatacgc ggaccacaac acaacggtaa cgttacgcag 60

tactttgaac gtggatgcga ccatgcgcgt gacctccttc 100

<210> 19

<211> 74

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide

primer

<400> 19

tttgcacatg tacatcctgt acgtgctgtt cttcggttc acctacggcc agctcgctt 60

cacggtaagg gagg

74

<210> 20

<211> 100

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide

primer

<400> 20

gctgccgatc agccacacga ctggatacgc ggaccacaac acaacggtaa cgttacgcag 60

tactttgaac gtggatgcga ccgtgacctc cttctccgcc

100

<210> 21

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide

primer

<400> 21

gtacatcctg tacgtgctgt tcttcgggtt caccggc

37

<210> 22

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide

primer

<400> 22

atccctgtacg tgctgttctt cgggttcacc ggc

33

<210> 23

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide

primer

<400> 23

acgacggat acgcggacca caacacaacg g

31

<210> 24
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 24
cgggataacgc ggaccacaac acaacgg

27

<210> 25
<211> 93
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer chimeric loop 3 sequence

<220>
<221> CDS
<222> (1)..(93)

<400> 25

acc cag ctc gtc ttc acg gtc aag gag gcg gcg gcg cag cag cag gag 48

Thr Gln Leu Val Phe Thr Val Lys Glu Ala Ala Ala Gln Gln Glu

1

5

10

15

tcg gcg acg acg cag aag gcg gag aag gag gtc acg cgc atg gtc 93

Ser Ala Thr Thr Gln Lys Ala Glu Lys Glu Val Thr Arg Met Val

20

25

30

<210> 26

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:chimeric loop 3

sequence

<400> 26

Thr Gln Leu Val Phe Thr Val Lys Glu Ala Ala Ala Gln Gln Glu

1

5

10

15

Ser Ala Thr Thr Gln Lys Ala Glu Lys Glu Val Thr Arg Met Val

20

25

30

<210> 27

<211> 93

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<222> (1)..(93)

<220>

<223> Description of Artificial Sequence:oligonucleotide

primer chimeric loop 3 sequence

<400> 27

acc tac ggc cag ctc gtc ttc acg gtc aag gag gcg gcg gcg cag cag 48

Thr Tyr Gly Gln Leu Val Phe Thr Val Lys Glu Ala Ala Ala Gln Gln

1

5

10

15

cag gag tcg gcg acg acg cag aag gcg gag aag gag gtc acg gtc 93

Gln Glu Ser Ala Thr Thr Gln Lys Ala Glu Lys Glu Val Thr Val

20

25

30

<210> 28

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:chimeric loop 3

sequence

<400> 28

Thr Tyr Gly Gln Leu Val Phe Thr Val Lys Glu Ala Ala Ala Gln Gln

1

5

10

15

Gln Glu Ser Ala Thr Thr Gln Lys Ala Glu Lys Glu Val Thr Val

20

25

30

<210> 29

<211> 99

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide

primer chimeric loop 3 sequence

<220>

<221> CDS

<222> (1)..(99)

<400> 29

acc tac ggc cag ctc gtc ttc acg gtc aag gag gcg gcg gcg cag cag 48

Thr Tyr Gly Gln Leu Val Phe Thr Val Lys Glu Ala Ala Ala Gln Gln

1

5

10

15

cag gag tcg gcg acg acg cag aag gcg gag aag gag gtc acg cgc atg 96

Gln Glu Ser Ala Thr Thr Gln Lys Ala Glu Lys Glu Val Thr Arg Met

20

25

30

gtc

99

Val

<210> 30

<211> 33

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:chimeric loop 3

sequence

<400> 30

Thr Tyr Gly Gln Leu Val Phe Thr Val Lys Glu Ala Ala Ala Gln Gln

1

5

10

15

Gln Glu Ser Ala Thr Thr Gln Lys Ala Glu Lys Glu Val Thr Arg Met

20

25

30

Val

<210> 31

<211> 87

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<222> (1)..(87)

<220>

<223> Description of Artificial Sequence:oligonucleotide

primer chimeric loop 3 sequence

<400> 31

acc cag ctc gtc ttc acg gtc aag gag gcg gcg gcg cag cag cag gag 48

Thr Gln Leu Val Phe Thr Val Lys Glu Ala Ala Ala Gln Gln Gln Glu

1

5

10

15

tcg gcg acg acg cag aag gcg gag aag gag gtc acg gtc 87

Ser Ala Thr Thr Gln Lys Ala Glu Lys Glu Val Thr Val

20

25

<210> 32

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:chimeric loop 3

sequence

<400> 32

Thr Gln Leu Val Phe Thr Val Lys Glu Ala Ala Ala Gln Gln Gln
1 5 10 15

Ser Ala Thr Thr Gln Lys Ala Glu Lys Glu Val Thr Val

20 25

<210> 33

<211> 96

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<222> (1)..(96)

<220>

<223> Description of Artificial Sequence:oligonucleotide
primer chimeric loop 3 sequence

<400> 33

acc ggc cag ctc gtc ttc acg gtc aag gag gcg gcg gcg cag cag cag 48

Thr Gly Gln Leu Val Phe Thr Val Lys Glu Ala Ala Gln Gln Gln

1 5 10 15

gag tcg gcg acg acg cag aag gcg gag aag gag gtc acg cgc atg gtc 96
Glu Ser Ala Thr Thr Gln Lys Ala Glu Lys Glu Val Thr Arg Met Val
20 25 30

<210> 34

<211> 32

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:chimeric loop 3
sequence

<400> 34

Thr Gly Gln Leu Val Phe Thr Val Lys Glu Ala Ala Ala Gln Gln
1 5 10 15

Glu Ser Ala Thr Thr Gln Lys Ala Glu Lys Glu Val Thr Arg Met Val
20 25 30

<210> 35

<211> 90

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<222> (1)..(90)

<220>

<223> Description of Artificial Sequence:oligonucleotide
primer chimeric loop 3 sequence

<400> 35

acc ggc cag ctc gtc ttc acg gtc aag gag gcg gcg gcg cag cag cag 48
Thr Gly Gln Leu Val Phe Thr Val Lys Glu Ala Ala Ala Gln Gln Gln

1 5 10 15

gag tcg gcg acg acg cag aag gcg gag aag gag gtc acg gtc 90
Glu Ser Ala Thr Thr Gln Lys Ala Glu Lys Glu Val Thr Val

20 25 30

<210> 36

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:chimeric loop 3
sequence

<400> 36

Thr Gly Gln Leu Val Phe Thr Val Lys Glu Ala Ala Ala Gln Gln Gln

1 5 10 15

Glu Ser Ala Thr Thr Gln Lys Ala Glu Lys Glu Val Thr Val

20

25

30

<210> 37

<211> 96

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<222> (1)..(96)

<220>

<223> Description of Artificial Sequence:oligonucleotide

primer chimeric loop 3 sequence

<400> 37

acc tac ggc cag ctc gtc ttc acg gtc aag gag gcg gcg gcg cag cag 48

Thr Tyr Gly Gln Leu Val Phe Thr Val Lys Glu Ala Ala Ala Gln Gln

1

5

10

15

cag gag tcg gcg acg acg cag aag gcg gag aag gag gtc acg cgc gtc 96

Gln Glu Ser Ala Thr Thr Gln Lys Ala Glu Lys Glu Val Thr Arg Val

20

25

30

<210> 38

<211> 32

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:chimeric loop 3

sequence

<400> 38

Thr Tyr Gly Gln Leu Val Phe Thr Val Lys Glu Ala Ala Ala Gln Gln

1 5 10 15

Gln Glu Ser Ala Thr Thr Gln Lys Ala Glu Lys Glu Val Thr Arg Val

20 25 30

<210> 39

<211> 90

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<222> (1)..(90)

<220>

<223> Description of Artificial Sequence:oligonucleotide

primer chimeric loop 3 sequence

<400> 39

acc cag ctc gtc ttc acg gtc aag gag gcg gcg gcg cag cag gag 48

Thr Gln Leu Val Phe Thr Val Lys Glu Ala Ala Ala Gln Gln Glu

1

5

10

15

tcg gcg acg acg cag aag gcg gag aag gag gtc acg cgc gtc 90

Ser Ala Thr Thr Gln Lys Ala Glu Lys Glu Val Thr Arg Val

20

25

30

<210> 40

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:chimeric loop 3

sequence

<400> 40

Thr Gln Leu Val Phe Thr Val Lys Glu Ala Ala Ala Gln Gln Glu

1

5

10

15

Ser Ala Thr Thr Gln Lys Ala Glu Lys Glu Val Thr Arg Val

20

25

30

<210> 41

<211> 93
<212> DNA
<213> Artificial Sequence

<220>
<221> CDS
<222> (1)..(93)

<220>
<223> Description of Artificial Sequence:oligonucleotide
primer chimeric loop 3 sequence

<400> 41
acc ggc cag ctc gtc ttc acg gtc aag gag gcg gcg cag cag cag 48
Thr Gly Gln Leu Val Phe Thr Val Lys Glu Ala Ala Ala Gln Gln
1 5 10 15

gag tcg gcg acg acg cag aag gcg gag aag gag gtc acg cgc gtc 93
Glu Ser Ala Thr Thr Gln Lys Ala Glu Lys Glu Val Thr Arg Val
20 25 30

<210> 42
<211> 31
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:chimeric loop 3
sequence

<400> 42

Thr Gly Gln Leu Val Phe Thr Val Lys Glu Ala Ala Ala Gln Gln Gln

1 5 10 15

Glu Ser Ala Thr Thr Gln Lys Ala Glu Lys Glu Val Thr Arg Val

20 25 30

<210> 43

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: high affinity

analog

<400> 43

Val Leu Glu Asp Leu Lys Ser Cys Gly Leu Phe Gly

1 5 10

<210> 44

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:random peptide

<400> 44

Ser Ser Val Phe Leu Val Val Asp Arg Ser Arg

1

5

10

<210> 45

<211> 91

<212> DNA

<213> Halobacterium salinarium

<400> 45

cctgcagggt cgctggactc atccaccta gcattcaccc tgctcttgg tgtgctactc 60

gttctatgac accctcgac caatactggc t

91

<210> 46

<211> 266

<212> DNA

<213> human

<220>

<221> CDS

<222> (2)..(265)

<400> 46

g tac atc ctg tac gtg ctg ttc ttc ggg ttc acc cgc gtc ttc cag gag 49

Tyr Ile Leu Tyr Val Leu Phe Phe Gly Phe Thr Arg Val Phe Gln Glu

1

5

10

15

gcg aag cgc cag ctc cag aag atc gac aag tcc gag ggc cgc ttc cac 97

Ala Lys Arg Gln Leu Gln Lys Ile Asp Lys Ser Glu Gly Arg Phe His

20

25

30

gtc cag aac ctc tcc cag gtc gag cag gac ggc cgc acc ggc cac ggc 145

Val Gln Asn Leu Ser Gln Val Glu Gln Asp Gly Arg Thr Gly His

35

40

45

ctc cgc cgc tcc tcc aag ttc tgc ctc aag gag cac aag gcg ctc aag 193

Leu Arg Arg Ser Ser Lys Phe Cys Leu Lys Glu His Lys Ala Leu Lys

50

55

60

acc ctc gag gtc gca tcc acg ttc aaa gta ctg cgt aac gtt acc gtt 241

Thr Leu Glu Val Ala Ser Thr Phe Lys Val Leu Arg Asn Val Thr Val

65

70

75

80

gtg ttg tgg tcc gcg tat ccc tcg t 266

Val Leu Trp Ser Ala Tyr Pro Ser

85

<210> 47

<211> 88

<212> PRT

<213> human

<400> 47

Tyr Ile Leu Tyr Val Leu Phe Phe Gly Phe Thr Arg Val Phe Gln Glu

1 5 10 15

Ala Lys Arg Gln Leu Gln Lys Ile Asp Lys Ser Glu Gly Arg Phe His

20 25 30

Val Gln Asn Leu Ser Gln Val Glu Gln Asp Gly Arg Thr Gly His Gly

35 40 45

Leu Arg Arg Ser Ser Lys Phe Cys Leu Lys Glu His Lys Ala Leu Lys

50 55 60

Thr Leu Glu Val Ala Ser Thr Phe Lys Val Leu Arg Asn Val Thr Val

65 70 75 80

Val Leu Trp Ser Ala Tyr Pro Ser

85

<210> 48

<211> 90

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 48

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gcggaggccg tggccgggtgc ggccgtcctg

90

<210> 49

<211> 89

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 49

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tcgagggtct tgagcgcctt gtgctcctt

89

<210> 50

<211> 24

<212> DNA

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<220>

<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 50

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24

<210> 51

<211> 90

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 51

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cagaagatcg acaagtccga gggccgcttc

90

<210> 52

<211> 90

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 52

aagcgccagc tccagaagat cgacaagtcc gagggccgct tccacgtcca gaacctctcc 60

caggtcgagc aggacggccg caccggccac

90

<210> 53

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:oligonucleotide
primer

<400> 53

gctgccgatc agccacacga ctggatacgc ggacc

35